

REMARKS

Applicant sincerely appreciates the Office's attention to the instant application and, in particular, reinstatement of claim 42, which is original. In view of the following remarks, Applicant respectfully requests reconsideration
5 and allowance of the subject application. This amendment is believed to be fully responsive to all issues raised in the May 24, 2004 Office Action.

In view of the Office's earlier restriction requirement, Applicant retains rights to present any of the withdrawn claims in a divisional application and/or, if a generic or linking claim is subsequently allowed, to rejoin any withdrawn
10 claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic or linking claim as provided by 37 CFR §1.141.

As stated above, claims 1, 11, 57 and 59 are currently amended. In particular, claims 1, 11 and 59 are currently amended to more particularly and
15 clearly recite the core of the heat exchanger as being to facilitate heat exchange. In particular, claims 1, 11 and 59 now recite a core having a variable length and comprising a stack of plates to facilitate heat exchange.

In the Office Action of May 24, 2004, claim 58 was objected to as being dependent on a rejected base claim, in turn, Applicant has rewritten claim 57 to
20 include the subject matter of claim 58 and canceled claim 58. Applicant makes no admission that claim 57, prior to the current amendment, was unpatentable

over the references of record. Claims 1, 2, 7, 8, 11, 32, 37, 38, 42, 49, 52, 53, 56, 57 and 59 are pending.

Rejections under 35 U.S.C. §102

5 In the Office Action mailed May 24, 2004, the Office made the following rejections under 35 U.S.C. §102:

1. Rejection of Claims 1, 2, 7, 8, 11 and 59 under 35 U.S.C. §102(b) as anticipated by Altoz et al. (3,957,107), "Altoz reference";
2. Rejection of Claims 1, 2, 7, 8, 11, 32, 37, 42, 49, 52 and 53 under
10 35 U.S.C. §102(b) as anticipated by La Haye (4,134,449) "La Haye reference";
3. Rejection of Claims 1, 2, 7, 8, 11, 32, 37, 38, 49, 52 and 57 under 35 U.S.C. §102(b) as anticipated by Grotness (4,134,306), "Grotness reference"; and
4. Rejection of Claims 1, 2, 7, 8, 11, 32, 37, 42, 49, 52 and 53 under
15 35 U.S.C. §102(e) as anticipated by Gorbell (6,703,154), "Gorbell reference".

Anticipation is a legal term of art. Applicant notes that in order to provide a valid finding of anticipation, several conditions must be met: (i) the reference must include every element of the claim within the four corners of the reference (see MPEP §2121); (ii) the elements must be set forth as they are recited in the
20 claim (see MPEP §2131); (iii) the teachings of the reference cannot be modified (see MPEP §706.02, stating that "No question of obviousness is present" in conjunction with anticipation); and (iv) the reference must enable the invention

as recited in the claim (see MPEP §2121.01). Additionally, (v) these conditions must be simultaneously satisfied.

Specifically, the PTO and Federal Circuit provide that §102 anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). The corollary of this rule is that the absence from a cited §102 reference of any claimed element negates the anticipation. *Kloster Speedsteel AB, et al. v. Crucible, Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986).

10 *Claims 1, 2, 7 and 8*

Claim 1 was rejected as being anticipated by the Altoz reference, as being anticipated by the La Haye reference, as being anticipated by the Grotness reference and as being anticipated by the Gorbell reference.

Claim 1, as currently amended, is directed to a heat exchanger comprising:

- a. a core having a variable size and comprising a stack of plates to facilitate heat exchange; and
- b. a support structure connected to the core, the support structure having a fluid-biased, deformable member for accommodating variations in the size of the core.

Applicant chose to add “comprising a stack of plates to facilitate heat exchange” to more clearly recite the core of the heat exchanger, for example, as described at page 1, line 24 of the instant application: “the core 20 is constructed of a stack of thin plates 22”.

The Altoz reference does not disclose the core of claim 1. The Office has identified a wick (item 16) and called it a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 1 is not anticipated by the Altoz reference.

5 The La Haye reference does not disclose the core of claim 1. The Office has identified two heat exchange tubes (items 13, 13') and called them a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 1 is not anticipated by the La Haye reference.

10 The Grotness reference does not disclose the core of claim 1. The Office has identified a coil compression spring (item 128) and called it a core, which is not a core *to facilitate heat exchange*. Therefore, claim 1 is not anticipated by the Grotness reference.

15 The Gorbell reference does not disclose the core of claim 1. The Office has identified a fuel cell stack (item 10) and called it a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 1 is not anticipated by the Gorbell reference.

 Claims 2, 7 and 8 depend on claim 1 and, for at least the foregoing reasons, are not anticipated by the Altoz reference, the La Haye reference, the Grotness reference, or the Gorbell reference.

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Claims 11, 32, 37, 42, 49, 52 and 53

Claim 11 was rejected as being anticipated by the Altoz reference, as being anticipated by the La Haye reference, as being anticipated by the Grotness reference and as being anticipated by the Gorbelt reference.

Claim 11, as currently amended, is directed to a heat exchanger
5 comprising:

- a. *a core having a variable length and comprising a stack of plates to facilitate heat exchange; and*
- b. *a support structure, wherein the core is received by the support structure, wherein the support structure comprises a fixed member and*
10 *an attached fluid-biased, deformable member for accommodating variations in the length of the core while applying a biasing force to the core.*

Applicant chose to add “comprising a stack of plates to facilitate heat exchange” to more clearly recite the core of the heat exchanger, for example, as described at page 1, line 24 of the instant application: “the core 20 is
15 constructed of a stack of thin plates 22”.

The Altoz reference does not disclose the core of claim 11. The Office has identified a wick (item 16) and called it a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 11 is not anticipated by the Altoz reference.

20 The La Haye reference does not disclose the core of claim 11. The Office has identified two heat exchange tubes (items 13, 13') and called them a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 11 is not anticipated by the La Haye reference.

The Grotness reference does not disclose the core of claim 11. The Office has identified a coil compression spring (item 128) and called it a core, which is not a core *to facilitate heat exchange*. Therefore, claim 11 is not anticipated by the Grotness reference.

5 The Gorbell reference does not disclose the core of claim 11. The Office has identified a fuel cell stack (item 10) and called it a core, which is not a core *comprising a stack of plates to facilitate heat exchange*. Therefore, claim 11 is not anticipated by the Gorbell reference.

10 Claims 32, 37, 42, 52 and 53 depend on claim 11 and, for at least the foregoing reasons, are not anticipated by the Altoz reference, the La Haye reference, the Grotness reference, or the Gorbell reference.

Claim 57

Claim 57 was rejected as being anticipated by the Grotness reference.

15 Claim 57 was amended to include the subject matter of objected to claim 58 and thus claim 57 is not anticipated by the Grotness reference. However, Applicant submits that the Grotness reference does not disclose the core of claim 57. The Office has identified a coil compression spring (item 128) and called it a core, which is not a core of a heat exchanger. Therefore, Applicant

20 submits that claim 57 even prior to the current amendment is not anticipated by the Grotness reference.

Rejections under 35 U.S.C. §103

In the Office Action of May 24, 2004, the Office rejected claims 1, 2, 7, 8, 11, 32, 37, 49 and 52 under 35 U.S.C. §103(a) over Matsuo Shinobu (JP 408029077A) in view of La Haye (4,134,449).

5 The Office's burden in establishing a prima facie case of obviousness is set forth in the MPEP, which states:

10 To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to
15 make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

20 M.P.E.P. § 2142.

Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a prima facie case have not been met.

25 *Claims 1, 2, 7 and 8*

Applicant relies on JP8029077 to Matsuo Shinobu for this response, which is referred to as the Shinobu reference. Applicant submits that claim 1, as currently amended, is patentable over the Shinobu reference in view of the La Haye reference. In particular, Applicant submits that the Office has failed to
30 make a prima facie case of obviousness because there is no suggestion or

motivation in the Shinobu and the La Haye references or in the knowledge generally available to one of ordinary skill in the art to modify the Shinobu reference or to combine reference teachings and arrive at the subject matter of claim 1.

5 Claim 1, as currently amended, recites “a core having a variable size and comprising a stack of plates to facilitate heat exchange” and “a support structure connected to the core, the support structure having a fluid-biased, deformable member for accommodating variations in the size of the core”.

10 As discussed in Applicant’s prior response, the originators of the Shinobu reference chose to use the “metallic bellows” 21 to isolate fluid flow paths 23 and 24 and the coil spring 22 as a biasing means positioned in the flow path 24 that is quite unaffected by gas pressure or fluid flow in the fluid flow paths 23 and 24. Given this choice, there is no motivation to choose or to substitute a
15 fluid-biased, deformable member for the “metallic bellows” 21 and the coil spring 22.

 More specifically, the Office refers to item 21, the “metallic bellows” (English language Abstract of the Shinobu reference), as a biased deformable member. As described in the Shinobu reference, this item includes item 22,
20 “coil springs” (English language Abstract of the Shinobu reference). As stated in the Shinobu reference, “a manifold mounted on the other side is connected to the pressure vessel via bellows and elastic members” and “thermal stress does not occurs [sic] on the laminate body 1 as the difference is absorbed by the expansion or contraction of the bellows 21 and the coil springs 22” (English

language Abstract of the Shinobu reference). Further, the “metallic bellows” 21 act to isolate fluid flow paths 23 and 24.

Applicant submits that the “metallic bellows” 21 of the Shinobu reference cannot function as a fluid-biased, deformable member. In particular, the

5 “metallic bellows” have a fluid inlet and a fluid outlet. The fluid inlet receives low temperature fluid from a laminate body and the fluid outlet exits to a header. With respect to fluid dynamics, fluid flows from a high pressure to a low pressure. Thus, the fluid outlet is at a low pressure when one considers the entire structure of Figure 1 of the Shinobu reference. Further, fluid pressure

10 varies inversely with temperature. These two factors, i.e., (i) fluid outlet and (ii) low temperature, indicate that any biasing between the laminate body 1 and the header 20 occurs via the coil springs 22 and not the “metallic bellows”. Indeed, pressurizing the “metallic bellows” 21 of the Shinobu reference would be likely to (i) increase temperature of the low temperature fluid and (ii) reduce fluid flow

15 through the laminate body. This makes no sense and consequently, the Shinobu reference does not provide any suggestion to use a fluid-biased, deformable member. Further, the Shinobu reference includes no evidence that would motivate one of ordinary skill in the art to use a fluid-biased, deformable member as a substitute for the “metallic bellows” 21 and the coil spring 22.

20 Thus, Applicant submits that claim 1 and dependent claims 2, 7 and 8 are patentable over the Shinobu reference in view of the La Haye reference.

Claims 11, 32, 37, 42, 49, 52 and 53

Applicant relies on JP8029077 to Matsuo Shinobu for this response, which is referred to as the Shinobu reference. Applicant submits that claim 11, as currently amended, is patentable over the Shinobu reference in view of the La Haye reference. In particular, Applicant submits that the Office has failed to make a prima facie case of obviousness because there is no suggestion or motivation in the Shinobu and the La Haye references or in the knowledge generally available to one of ordinary skill in the art to modify the Shinobu reference or to combine reference teachings and arrive at the subject matter of claim 11.

Claim 11, as currently amended, recites “*a core having a variable length and comprising a stack of plates to facilitate heat exchange*” and “*a support structure, wherein the core is received by the support structure, wherein the support structure comprises a fixed member and an attached fluid-biased, deformable member for accommodating variations in the length of the core while applying a biasing force to the core*”.

As discussed in Applicant's prior response, the originators of the Shinobu reference chose to use the “metallic bellows” 21 to isolate fluid flow paths 23 and 24 and the coil spring 22 as a biasing means positioned in the flow path 24 that is quite unaffected by gas pressure or fluid flow in the fluid flow paths 23 and 24. Given this choice, there is no motivation to choose or to substitute a

fluid-biased, deformable member for the “metallic bellows” 21 and the coil spring 22.

As discussed above for claim 1, the Shinobu reference includes no evidence that would motivate one of ordinary skill in the art to use a fluid-biased, deformable member as a substitute for the “metallic bellows” 21 and the coil spring 22. Thus, Applicant submits that claim 11 and dependent claims 32, 37, 42, 49, 52 and 53 are patentable over the Shinobu reference in view of the La Haye reference.

10 Conclusion

Claims 1, 2, 7, 8, 11, 32, 37, 38, 42, 49, 52, 53, and 56, 57 and 59 are believed to be in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

Respectfully Submitted,

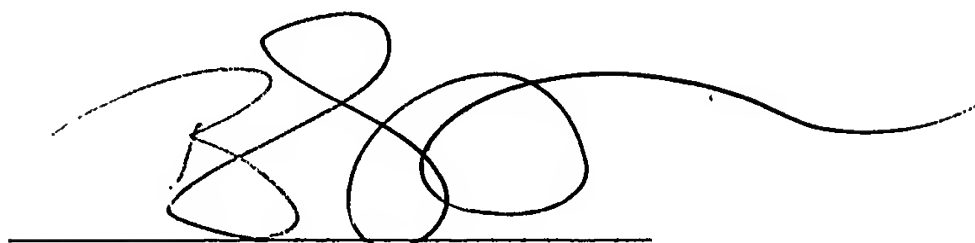
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A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke, positioned above a solid horizontal line.

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